

Remarks/Arguments

In an Office Action dated October 12, 2006, claims 1, 28, 44, 46, 58, 60, 65 and 66 were objected to for informalities and claims 1-22, 28-30, 33, 58, 60, 65 and 66 were rejected under § 101, with no substantive rejection of claims 44 and 46. Applicants have addressed the objections and respectfully traverse the § 101 rejections.

Claim Objections

Claims 1, 28, 44, 46, 58, 60, 65 and 66 were objected to for informalities. Those have been corrected, as have similar informalities in other claims and typographical errors in certain claims.

§ 101 Rejections

Claims 1-22, 28-30, 33, 58, 60, 65 and 66 stand rejected under § 101 as being directed to non-statutory subject matter. Applicants respectfully traverse the rejections. Applicants submit that the method and system claims, such as claims 1, 28, 58, 60, 65 and 66 are statutory subject matter, at least because they have a practical application by physical transformation and because they produce a useful, concrete and tangible result. Reviewing the various non-statutory subject matter rejections and the Interim Guidelines of November 2005 as reproduced in the MPEP, Applicants believe that the caselaw behind the portions of the Interim Guidelines on Practical Application by Physical Transformation and Practical Application That Produces a Useful, Concrete and Tangible Result fully supports patentability of the present claims under § 101. While the Interim Guidelines broadly discuss the topics, they provide very little practical, relevant guidance. Applicants review and excerpt relevant caselaw; reference the 1996 Examination Guidelines for Computer-Related Inventions and provide a portion of training materials on the 1996 Examination Guidelines, which are still provided on the PTO website under Guidance, Tools and Manuals. Analysis of the instant independent claims under the training materials is then provided. Copies of the discussed cases, the 1996 Guidelines and the excerpted and completed training materials are attached to this Amendment to aid the Examiner.

Caselaw

AT&T

Applicants commence by reviewing and excerpting AT&T Corp. v. Excel Communications, Inc., 50 U.S.P.Q. 2d 1447 (Fed. Cir. 1999), one of the cases which prompted the updating of the 1996 Guidelines to form the Interim Guidelines.

As previously explained, AT&T's claimed process employs subscribers' and call recipients' PICs as data, applies Boolean algebra to those data to determine the value of the PIC indicator, and applies that value through switching and recording mechanisms to create a signal useful for billing purposes. In *State Street*, we held that the processing system there was patentable subject matter because the system takes data representing discrete dollar amounts through a series of mathematical calculations to determine a final share price - a useful, concrete, and tangible result. 50 U.S.P.Q. 2d at 1452. (emphasis added)

As stated by the court, a physical transformation is not an invariable requirement. The court stated:

The notion of "physical transformation" can be misunderstood. In the first place, it is not an invariable requirement, but merely one example of how a mathematical algorithm may bring about a useful application. As the Supreme Court itself noted, "when [a claimed invention] is performing a function which the patent laws were designed to protect (e.g., transforming or reducing an article to a different state or thing), then the claim satisfies the requirements of § 101." *Diehr*, 450 U.S. at 192 (emphasis added). The "e.g." signal denotes an example, not an exclusive requirement. *Id.*

Applicants note the statement opens the MPEP section on Practical Application That Produces a Useful, Concrete and Tangible Result. The court goes on to state:

This understanding of transformation is consistent with our earlier decision in *Arrhythmia*, 958 F.2d 1053, 22 U.S.P.Q.2D (BNA) 1033 (Fed. Cir. 1992). *Arrhythmia*'s process claims included various mathematical formulae to analyze electrocardiograph signals to determine a specified heart activity. See *id.* at 1059, 22 U.S.P.Q.2D (BNA) at 1037-38. The *Arrhythmia* court reasoned that the method claims qualified as statutory subject matter by noting that the steps transformed physical, electrical signals from one form into another form - a number representing a signal related to the patient's heart activity, a non-abstract output. See *id.*, 22

U.S.P.Q.2D (BNA) at 1038. The finding that the claimed process "transformed" data from one "form" to another simply confirmed that Arrhythmia's method claims satisfied § 101 because the mathematical algorithm included within the process was applied to produce a number which had specific meaning - a useful, concrete, tangible result - not a mathematical abstraction. *Id.* (emphasis added)

The claim at issue in AT&T was:

A method for use in a telecommunications system in which interexchange calls initiated by each subscriber are automatically routed over the facilities of a particular one of a plurality of interexchange carriers associated with that subscriber, said method comprising the steps of:

generating a message record for an interexchange call between an originating subscriber and a terminating subscriber, and

including, in said message record, a primary interexchange carrier (PIC) indicator having a value which is a function of whether or not the interexchange carrier associated with said terminating subscriber is a predetermined one of said interexchange carriers. *Id. at 1449.*

The court concluded:

In this case, Excel argues, correctly, that the PIC indicator value is derived using a simple mathematical principle (p and q). But that is not determinative because AT&T does not claim the Boolean principle as such or attempt to forestall its use in any other application. It is clear from the written description of the '784 patent that AT&T is only claiming a process that uses the Boolean principle in order to determine the value of the PIC indicator. The PIC indicator represents information about the call recipient's PIC, a useful, non-abstract result that facilitates differential billing of long-distance calls made by an IXC's subscriber. Because the claimed process applies the Boolean principle to produce a useful, concrete, tangible result without pre-empting other uses of the mathematical principle, on its face the claimed process comfortably falls within the scope of § 101. See *Arrhythmia Research Tech. Inc. v. Corazonix Corp.*, 958 F.2d 1053, 1060, 22 U.S.P.Q.2D (BNA) 1033, 1039 (Fed. Cir. 1992) ("That the product is numerical is not a criterion of whether the claim is directed to statutory subject matter."). *Id. at 1452.* (emphasis added)

Alappat

The next case of relevance is *In re Alappat*, 31 U.S.P.Q. 2d 1545 (Fed. Ct. 1994), cited in AT&T as relating at least to useful, concrete and tangible results.

Thus, the Alappat inquiry simply requires an examination of the contested claims to see if the claimed subject matter as a whole is a disembodied mathematical concept representing nothing more than a "law of nature" or an "abstract idea," or if the mathematical concept has been reduced to some practical application rendering it "useful." *Id.* at 1544, 31 U.S.P.Q.2D (BNA) at 1557. In Alappat, we held that more than an abstract idea was claimed because the claimed invention as a whole was directed toward forming a specific machine that produced the useful, concrete, and tangible result of a smooth waveform display. 50 U.S.P.Q. 2d at 1451. (emphasis added)

The claim at issue on Alappat read:

A rasterizer for converting vector list data representing sample magnitudes of an input waveform into anti-aliased pixel illumination intensity data to be displayed on a display means comprising:

- (a) means for determining the vertical distance between the endpoints of each of the vectors in the data list;
- (b) means for determining the elevation of a row of pixels that is spanned by the vector;
- (c) means for normalizing the vertical distance and elevation; and
- (d) means for outputting illumination intensity data as a predetermined function of the normalized vertical distance and elevation. 31 U.S.P.Q. 2d at 1553.

The Court in Alappat focused on the claim subject matter as a whole.

Given the foregoing, the proper inquiry in dealing with the so called mathematical subject matter exception to § 101 alleged herein is to see whether the claimed subject matter as a whole is a disembodied mathematical concept, whether categorized as a mathematical formula, mathematical equation, mathematical algorithm, or the like, which in essence represents nothing more than a "law of nature," "natural phenomenon," or "abstract idea." If so, Diehr precludes the patenting of that subject matter. That is not the case here.

Although many, or arguably even all, n22 of the means elements recited in claim 15 represent circuitry elements that perform mathematical calculations, which is essentially true of all digital electrical circuits, the claimed invention as a whole is directed to a combination of interrelated elements which combine to form a machine for converting discrete waveform data samples into anti-aliased pixel illumination intensity data to be displayed on a display means. n23 This is not a disembodied mathematical concept which may be

characterized as an "abstract idea," but rather a specific machine to produce a useful, concrete, and tangible result.

n22 The Board majority stated that each of the means of claim 15 represents a mathematical operation. The majority failed, however, to point out any particular mathematical equations corresponding to elements (c) and (d) of claim 15. In addition, we note the Board majority's irreconcilable position that it is free to impute mathematical equations from Alappat's specification into claim 15, yet it refuses to impute the electrical structure designed to carry out the arithmetic operations.

n23 Although means (a) and (b) are independent of each other as claimed, each utilizes the same inputs and is connected to element (c), as means (c) normalizes the output of means (a) and (b). Means (c) is in turn connected to means element (d) which outputs illumination intensity data in response to an input from means (c).

The fact that the four claimed means elements function to transform one set of data to another through what may be viewed as a series of mathematical calculations does not alone justify a holding that the claim as a whole is directed to nonstatutory subject matter. See *In re Iwahashi*, 888 F.2d at 1375, 12 U.S.P.Q.2D (BNA) at 1911. n24 Indeed, claim 15 as written is not "so abstract and sweeping" that it would "wholly pre-empt" the use of any apparatus employing the combination of mathematical calculations recited therein. See *Benson*, 409 U.S. at 68-72 (1972). Rather, claim 15 is limited to the use of a particularly claimed combination of elements performing the particularly claimed combination of calculations to transform, i.e., rasterize, digitized waveforms (data) into anti-aliased, pixel illumination data to produce a smooth waveform.

n24 The Board majority's attempts to distinguish Iwahashi on the basis that the claim at issue in that case recited a ROM are unavailing. The Iwahashi court clearly did not find patentable subject matter merely because a ROM was recited in the claim at issue; rather the court held that the claim as whole, directed to the combination of the claimed means elements, including the claimed ROM as one element, was directed to statutory subject matter. It was not the ROM alone that carried the day. *Id.* at 1557-58. (emphasis added)

Arrhythmia

The third case of interest is Arrhythmia Research Tech. Inc. v. Corazonix Corp., 22 U.S.P.Q. 2d 1033 (Fed. Cir. 1992), which has previously been discussed at some length in prior responses in this application. The AT&T Court specifically notes that its decision is consistent with Arrhythmia, as quoted above. The claims in Arrhythmia were:

1. A method for analyzing electrocardiograph signals to determine the presence or absence of a predetermined level of high frequency energy in the late QRS signal, comprising the steps of:

converting a series of QRS signals to time segments, each segment having a digital value equivalent to the analog value of said signals at said time;

applying a portion of said time segments in reverse time order to high pass filter means;

determining an arithmetic value of the amplitude of the output of said filter; and

comparing said value with said predetermined level.

7. Apparatus for analyzing electrocardiograph signals to determine the level of high frequency energy in the late QRS signal comprising:

means for converting X, Y, and Z lead electrocardiographic input signals to digital valued time segments;

means for examining said X, Y, and Z digital valued time segments and selecting therefrom the QRS waveform portions thereof;

means for signal averaging a multiplicity of said selected QRS waveforms for each of said X, Y, and Z inputs and providing composite, digital X, Y, and Z QRS wave forms;

high pass filter means;

means for applying to said filter means, in reverse time order, the anterior portion of each said digital X, Y, and Z waveform; and

means for comparing the output of said filter means with a predetermined level to obtain an indication of the presence of a high frequency, low level, energy component in the filter output of said anterior portions. *Id. at 1035.*

The Court analyzed the method claims as follows:

Simson's process is claimed as a "method for analyzing electrocardiograph signals to determine the presence or absence of a predetermined level of high-frequency energy in the late QRS signal". This claim limitation is not ignored in determining whether the subject matter as a whole is statutory, for all of the claim steps are in implementation of this method. The electrocardiograph signals are first transformed from analog form, in which they are obtained, to the corresponding digital signal. These input signals are not abstractions; they are related to the patient's heart function. The anterior portion of the QRS signal is then processed, as the next step, by the procedure known as reverse time order filtration. The digital filter design selected by Dr. Simson for this purpose, known as the Butterworth filter, is one of several known procedures for frequency filtering of digital waveforms. The filtered signal is further analyzed to determine its average magnitude, as described in the specification, by the root mean square technique. Comparison of the resulting output to a predetermined level determines whether late potentials reside in the anterior portion of the QRS segment, thus indicating whether the patient is at high risk

for ventricular tachycardia. The resultant output is not an abstract number, but is a signal related to the patient's heart activity.

These claimed steps of "converting", "applying", "determining", and "comparing" are physical process steps that transform one physical, electrical signal into another. The view that "there is nothing necessarily physical about 'signals'" is incorrect. *In re Taner*, 681 F.2d 787, 790, 214 USPQ 678, 681 (CCPA 1982) (holding statutory claims to a method of seismic exploration including the mathematically described steps of "summing" and "simulating from"). The *Freeman-Walter-Abele* standard is met, for the steps of Simson's claimed method comprise an otherwise statutory process whose mathematical procedures are applied to physical process steps.

It was undisputed that the individual mathematical procedures that describe these steps are all known in the abstract. The method claims do not wholly preempt these procedures, but limit their application to the defined process steps. In answering the question "What did the applicant invent?", *Grams*, 888 F.2d at 839, 12 USPQ2d at 1827, the Simson method is properly viewed as a method of analyzing electrocardiograph signals in order to determine a specified heart activity. Like the court in *Abele*, which was "faced simply with an improved CAT-scan process", 684 F.2d at 909, 214 USPQ at 688, the Simson invention is properly viewed as an electrocardiograph analysis process. The claims do not encompass subject matter transcending what Dr. Simson invented, as in *O'Reilly v. Morse*, 56 U.S. (15 How.) at 113 (claims covered any use of electric current to transmit characters at a distance); or in *Benson*, 409 U.S. at 68, 175 USPQ at 675 (use of claimed process could "vary from the operation of a train to verification of driver's licenses to researching the law books for precedents"); or in *Grams*, 888 F.2d at 840, 12 USPQ2d at 1828 (invention had application to "any complex system, whether it be electrical, mechanical, chemical or biological, or combinations thereof.")

The Simson claims are analogous to those upheld in *Diehr*, wherein the Court remarked that the applicants "do not seek to patent a mathematical formula. . . . they seek only to foreclose from others the use of that equation in conjunction with all of the other steps in their claimed process". 450 U.S. at 187, 209 USPQ at 8. Simson's claimed method is similarly limited. The process claims comprise statutory subject matter. *Id.* at 1038. (emphasis added)

And the apparatus claims as follows:

The apparatus claims require a means for converting the electrocardiograph signals from the analog form in which they are generated into digital form. This means is described in the specification as a specific electronic device, a conventional analog-to-digital converter. A minicomputer, configured as described in the specification, is the means of calculating

composite digital time segments of the QRS waveform. The product is stored, as stated in the specification, in the form of electrical signals. The high pass filter means is described in the specification as the minicomputer configured to perform the function of reverse time order filtration of the anterior portion of the QRS waveform. The specification and drawings show a disc memory unit to store the composite QRS signals, and associated connecting leads to the computer's processing unit. The comparing means is the processing unit configured to perform the specified function of root mean square averaging of the anterior portion of the QRS complex, and comparison of the resulting output with a predetermined level to provide an indication of the presence of late potentials in the electrocardiograph signal.

The Simson apparatus claims thus define "a combination of interrelated means" for performing specified functions. *Iwahashi*, 888 F.2d at 1375, 12 USPQ2d at 1911. The computer-performed operations transform a particular input signal to a different output signal, in accordance with the internal structure of the computer as configured by electronic instructions. "The claimed invention . . . converts one physical thing into another physical thing just as any other electrical circuitry would do". *In re Sherwood*, 613 F.2d 809, 819, 204 USPQ 537, 546 (CCPA 1980), cert. denied, 450 U.S. 994 (1981) (holding statutory claims to an apparatus for analyzing seismic signals including mathematically described means for "sonogramming", "dividing", and "plotting").

The use of mathematical formulae or relationships to describe the electronic structure and operation of an apparatus does not make it nonstatutory. *Iwahashi*, 888 F.2d at 1375, 12 USPQ2d at 1911. When mathematical formulae are the standard way of expressing certain functions or apparatus, it is appropriate that mathematical terms be used. *See W.L. Gore & Assoc., Inc. v. Garlock, Inc.*, 721 F.2d 1540, 1556, 220 USPQ 303, 315 (Fed. Cir. 1983), cert. denied, 469 U.S. 851 (1984) (patents are directed to those of skill in the art). *See also In re Bernhart*, 417 F.2d 1395, 1399, 163 USPQ 611, 616 (CCPA 1969) ("all machines function according to the laws of physics which can be mathematically set forth if known.") That Simson's claimed functions could not have been performed effectively without the speed and capability of electronic devices and components does not determine whether the claims are statutory.

Corazonix argues that the final output of the claimed apparatus (and process) is simply a number, and that *Benson* and *Flook* support the position that when the end product is a number, the claim is nonstatutory and can not be saved by claim limitations of the use to which this number is put. However, the number obtained is not a mathematical abstraction; it is a measure in microvolts of a specified heart activity, an indicator of the risk of ventricular tachycardia. That the product is numerical is not a criterion of whether the claim is directed to statutory subject matter. *See Meyer*, 688 F.2d at 796 n.4, 215 USPQ at 198 n.4 (explaining that so-called "negative rules" of

patentability "were not intended to be separate tests for determining whether a claim positively recites statutory subject matter.")

The Simson apparatus claims satisfy the criteria for statutory subject matter. They are directed to a specific apparatus of practical utility and specified application, and meet the requirements of 35 U.S.C. § 101. *Id.* at 1038-39. (emphasis added)

Comparison with Arrhythmia

Applicants consider it very useful to compare the analysis in Arrhythmia, the claim in Arrhythmia and claim 1 in the instant case. That comparison is provided in the following table.

Arrhythmia quote	Arrhythmia claim 1	Instant claim 1
<p>Simson's process is claimed as a "method for analyzing electrocardiograph signals to determine the presence or absence of a predetermined level of high-frequency energy in the late QRS signal". This claim limitation is not ignored in determining whether the subject matter as a whole is statutory, for all of the claim steps are in implementation of this method.</p> <p>...</p> <p>In answering the question "What did the applicant invent?", <i>Grams</i>, 888 F.2d at 839, 12 USPQ2d at 1827, the Simson method is properly viewed as a method of analyzing electrocardiograph signals in order to determine a specified heart activity. Like the court in <i>Abele</i>, which was "faced simply with an improved CAT-scan process", 684 F.2d at 909, 214 USPQ at 688, the Simson invention is properly viewed as an electrocardiograph analysis process. ... The process claims comprise statutory subject matter.</p>	<p>A method for analyzing electrocardiograph signals to determine the presence or absence of a predetermined level of high frequency energy in the late QRS signal, comprising the steps of:</p>	<p>A method for analyzing a plurality of sets of values associated with a plurality of genes to identify genes whose associated values differ by an amount of statistical significance among the sets, said associated values comprising levels of mRNA or protein, said associated values acquired by a process where biological samples containing said plurality of genes are hybridized to one or more microarrays of probes, thus measuring the levels of mRNA or protein in the biological samples, wherein the method comprises:</p>

Arrhythmia quote	Arrhythmia claim 1	Instant claim 1
<p>The electrocardiograph signals are first transformed from analog form, in which they are obtained, to the corresponding digital signal. These input signals are not abstractions; they are related to the patient's heart function.</p>	<p>converting a series of QRS signals to time segments, each segment having a digital value equivalent to the analog value of said signals at said time;</p>	<p>providing for each of the plurality of genes a parameter that contains information concerning differences in the associated values of that gene among the sets;</p>
<p>The anterior portion of the QRS signal is then processed, as the next step, by the procedure known as reverse time order filtration. ...</p>	<p>applying a portion of said time segments in reverse time order to high pass filter means;</p>	<p>adjusting the parameters of the plurality of genes so that variables related to the parameters are substantially independent of variations of scatter values or average associated values of the genes over the sets, said scatter values defined by the standard deviation of the associated values in the sets;</p>
<p>The filtered signal is further analyzed to determine its average magnitude, as described in the specification, by the root mean square technique.</p>	<p>determining an arithmetic value of the amplitude of the output of said filter; and</p>	<p>deriving an observed value and an expected value of the adjusted parameter for each gene from the sets of associated values, said expected value being indicative of the extent of variations in the adjusted parameter introduced by the process;</p>

Arrhythmia quote	Arrhythmia claim 1	Instant claim 1
Comparison of the resulting output to a predetermined level determines whether late potentials reside in the anterior portion of the QRS segment, thus indicating whether the patient is at high risk for ventricular tachycardia.	comparing said value with said predetermined level.	comparing the observed and expected values of the parameter to identify genes whose associated values differ by an amount of statistical significance among the sets; and
The resultant output is not an abstract number, but is a signal related to the patient's heart activity.		providing a list of genes whose associated values differ by an amount of statistical significance among the sets.
These claimed steps of "converting", "applying", "determining", and "comparing" are physical process steps that transform one physical, electrical signal into another. The view that "there is nothing necessarily physical about 'signals'" is incorrect. <i>In re Taner</i> , 681 F.2d 787, 790, 214 USPQ 678, 681 (CCPA 1982) (holding statutory claims to a method of seismic exploration including the mathematically described steps of "summing" and "simulating from").		

Reviewing the table, it is startling how similar Arrhythmia claim 1 and instant claim 1 are. Both are methods analyzing electrical signals representing physical properties, in Arrhythmia they are EKG signals and in the present application the signals indicate output of microarray testing of biological samples for variant presence of mRNA or proteins. The first step of each involves developing first numerical values from the received signals. The second step utilizes the developed values to determine particular characteristics of the values. The third step compares. At that point the Arrhythmia claim was declared statutory subject matter, without even having the fourth step of the current claim 1. Applicants note that the fourth step can be analogized to the final step in

claim 15 in Alappat, another statutory claim. The Arrhythmia court specifically states the transformative nature of the Arrhythmia claim. The AT&T court cites Arrhythmia as a transformation example and states that the resulting number had a specific meaning – a useful, concrete, tangible result.

One cannot argue that the output of claim 1, “a list of genes whose associated values differ by an amount of statistical significance among the sets” is not a useful and concrete result as the prior rejections based on utility and value of the claimed inventions have been withdrawn. When reviewed in light of the caselaw, it is clear the claimed list is a tangible result as well. Similar arguments apply to the claims 28, 58 and 60 and to claims 65 and 66 which use identify instead of list in the final element.

Training Materials Examples and Present Claims

Applicants have attached the Matrix examples from the Training Materials for the 1996 Examination Guidelines, as well as the 1996 Examination Guidelines¹ themselves to provide understanding for the examples and charts. The 1996 Examination Guidelines were considered necessary to be attached because the training materials were based on those Guidelines and utilize tables which reference a specific flowchart box and that flowchart is equivalent to that at page A-2 in the Appendix to the 1996 Guidelines. Without the flowchart to box correlation, the analysis is difficult to comprehend and the 1996 Examination Guidelines are not directly available on the PTO website in the necessary format including the flowchart without extensive searching, if at all. The matrix set of examples was included as being closest and most relevant to the present claims.

Following the matrix examples Applicants have provided tables and relevant notes on present claims 1, 28, 58, 60, 65 and 66. Applicants request review of the tables and notes. Applicants do not repeat the conclusions here at length, other than to note that the proper result of the flowchart analysis in all cases is a conclusion of statutory subject matter because the claimed inventions are limited to practical inventions, not manipulation of abstract ideas or solving purely mathematical problems without

¹ Applicants note that the provided copy of the 1996 Guidelines have been reformatted from the original but the content is unchanged.

limitation to a practical application. As in AT&T, Alappat and Arrhythmia, the current claims are all limited to practical applications and do not in any way limit other applications of the mathematical analysis. As in Alappat and Arrhythmia, the current claims have a practical application by physical transformation. As in all three cases, the current claims have a practical application that produces a useful, concrete and tangible result.

Specific Office Action Comments

The Office Action first argues that the value produced by the present claims is not in a tangible form such that a useful result is produced. Applicants first note that the final result of Arrhythmia was simply a comparison. The present claims provide as a final result either a list of genes or identify genes having associated values differing by an amount of statistical significance among the sets. Applicants submit that a list or identification of such genes is extremely useful, tangible and concrete to one skilled in the art doing gene analysis, say for example gene analysis relating to genetic aspects of congenital heart disease, such as GATA4 mutations which have been linked to cardiac septal defects.

The Office Action then apparently requires that the values provided by the claims must indicate some significant biological activity or characteristic and argues that providing a list of genes whose values differ is not concrete, tangible or useful. Applicants are concerned that the Office Action may be requiring the present claims to meet an inapplicable standard, such as efficacy or activity or others relating to drugs and the like, rather than the applicable standards relating to computer-related inventions. The Office Action also appears to be ignoring that the values provided do provide a very relevant biological characteristic, namely statistical significance of identification of particular genes expressed under particular circumstances, which is submitted as being necessary before any other positive conclusions can be made or results determined. If it were not possible to statistically identify the particular gene and all results had equal significance, genetic research would be greatly hampered. So the characteristic of being expressed to a statistically significant degree is indeed a very important biological characteristic.

Potential Future Rejection

Should this application continue to be rejected as non-statutory, which Applicants submit is not the case as the claims are clearly statutory when properly analyzed, Applicants request that comparisons be made and distinguishing points provided over both the provided caselaw and the examples in the training materials provided by the PTO. Applicants particularly request detailed analysis distinguishing the analysis provided by the Federal Circuit in Arrhythmia. Applicants urge that they are entitled to such a detailed and full response.

CONCLUSION

Based on the above remarks Applicants respectfully submit that all of the present claims are allowable. Reconsideration is respectfully requested.

Respectfully submitted,

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